

EXHIBIT 21



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CPUC Fire Safety Rulemaking Background

In October 2007, devastating wildfires driven by strong Santa Ana winds burned hundreds of square miles in Southern California. Several of the worst wildfires were reportedly ignited by overhead utility power lines and aerial communication facilities in close proximity to power lines. In response to these wildfires, the California Public Utilities Commission (CPUC) initiated [Rulemaking \(R.\) 08-11-005](#) to consider and adopt regulations to protect the public from potential fire hazards associated with overhead powerline facilities and nearby aerial communication facilities.

Beginning in 2009, the CPUC issued several decisions in [R.08-11-005](#) that together adopted dozens of new fire-safety regulations. Most of the adopted fire-safety regulations consisted of new or revised rules in [General Order \(GO\) 95](#). Several of the adopted fire-safety regulations apply only to areas, referred to as "high fire-threat areas," where there is an elevated risk for power line fires igniting and spreading rapidly. These high fire-threat areas are designated by several maps that were adopted on an interim basis. Each of the interim maps covers a different part of the State and uses its own

methodology for identifying high fire-threat areas, presenting consistency and potential enforcement issues. To address these issues, the CPUC also commenced the development of a single statewide fire-threat map to designate areas where (1) there is an elevated risk for destructive power line fires, and (2) where stricter fire-safety regulations should apply.

In May 2015, the CPUC closed R.08-11-005 and initiated successor rulemaking [R.15-05-006](#) to complete the outstanding tasks in R.08-11-005. The general scope of R.15-05-006 was to address the following matters carried over from the scope of R.08-11-005: (1) develop and adopt a statewide fire-threat map that delineates the boundaries of a new High Fire-Threat District (HFTD) where the previously adopted regulations will apply, (2) determine the need for additional fire-safety regulations in the HFTD, and (3) revise GO 95 to include a definition and maps of the HFTD, as well as any new fire-safety regulations. The scope and schedule for R.15-05-006 was divided into two parallel tracks. One track focused on the development and adoption of a statewide fire-threat map. The second track focused on the identification, evaluation, and adoption of fire-safety regulations in the HFTD.

On December 21, 2017, the CPUC issued [Decision \(D.\) 17-12-024](#) adopting regulations to enhance fire-safety in the HFTD, effectively completing the second track of R.15-05-006 described above. On January 19, 2018 the CPUC adopted, via Safety and Enforcement Division's [\(SED\) disposition of a Tier 1 Advice Letter](#), the final CPUC Fire-Threat Map. The adopted CPUC Fire-Threat Map, together with the map of Tier 1 High Hazard Zones (HHZs) on the U.S. Forest Service (USFS)- California Department of Forestry and Fire Protection's (CAL FIRE) joint map of tree mortality HHZs, comprise the HFTD Map where stricter fire-safety regulations apply. See more information under Fire Safety Regulations below.

[Sept. 19, 2018: SED-CAL FIRE Joint Assessment and Recommendation Report on Fire-Wind Map](#)

Fire-Threat Maps & the High Fire-Threat District (HFTD)

Map Dissemination

In accordance with the requirements of [D.17-01-009](#), SED makes available the following map products that collectively constitute the High Fire-Threat District (HFTD), which will direct future utility and communication infrastructure provider fire-safety activity in California:

1. [CPUC Fire-Threat Map - high resolution pdf \(8.5"x11"\)](#)
2. [CPUC Fire-Threat Map - high resolution pdf \(poster size\)](#)
3. [CPUC Fire-Threat Map - zip archive of native GIS files](#)
4. [USFS-CAL FIRE Joint Map of Tree Mortality HHZs - current version](#) (NOTE: Scroll down to the "maps and GIS Data" section for the current Tree Mortality HHZ Map, available in various formats)

In addition to the mandated map products required for posting in [D.17-01-009](#) and provided above, SED has collaborated with CAL FIRE and the IRT to provide the following supplemental map products:

1. [HFTD Map - high resolution pdf \(8.5"x11"\)](#)
2. [HFTD Map - high resolution pdf \(poster size\)](#)
3. [HFTD Map - GIS web viewer applet](#)

The HFTD Map provides a singular map depicting all parts of the HFTD from both map sources (i.e. CPUC Fire-Threat Map and Tree Mortality HHZ Map).

Interim Maps

The fire-safety regulations identified below require a map to designate "high fire-threat areas" where these regulations apply. The interim maps adopted in R.08-11-005 consisted of three surrogate fire-threat maps as follows:

1. A wildland fire-threat map prepared by the California Department of Forestry and Fire Protection's (CAL FIRE) as part of its Fire Resource and Assessment Program (FRAP). This map is often referred to as the "FRAP Map."
2. A modified FRAP Map developed by San Diego Gas & Electric (SDG&E) for its own service territory. This is sometimes referred to as the "SDG&E fire-threat map."
3. A map developed by communications utilities (see page 262 of D.12-01-032) to identify areas where there is an increased risk for utility-associated wildfires. This map is oftentimes referred to as the "Reax Map."

The Reax Map designated high fire-threat areas in Northern California where the below identified regulations applied. With the exception of SDG&E's service territory, the FRAP Map designated high fire-threat areas in Southern California where the previously identified regulations applied. The SDG&E fire-threat map was used for SDG&E's service territory.

CPUC Fire-Threat Map

In 2012, the CPUC ordered the development of a statewide map that is designed specifically for the purpose of identifying areas where there is an increased risk for utility associated wildfires. The development of the CPUC -sponsored fire-threat map, herein "CPUC Fire-Threat Map," started in [R.08-11-005](#) and continued in [R.15-05-006](#).

A multistep process was used to develop the statewide CPUC Fire-Threat Map. The first step was to develop Fire Map 1 (FM 1), an agnostic map which depicts areas of California where there is an elevated hazard for the ignition and rapid spread of powerline fires due to strong winds, abundant dry vegetation, and other environmental conditions. These are the environmental conditions associated with the catastrophic powerline fires that burned 334 square miles of Southern California in October 2007. FM 1 was developed by CAL FIRE and adopted by the CPUC in [Decision 16-05-036](#).

FM 1 served as the foundation for the development of the final CPUC Fire-Threat Map. The CPUC Fire-Threat Map delineates, in part, the boundaries of a new High Fire-Threat District (HFTD) where utility infrastructure and operations will be subject to stricter fire-safety regulations. Importantly, the CPUC Fire-Threat Map (1) incorporates the fire hazards associated with historical powerline wildfires besides the October 2007 fires in Southern California (e.g., the Butte Fire that burned 71,000 acres in Amador and Calaveras Counties in September 2015), and (2) ranks fire-threat areas based on the risks that utility-associated wildfires pose to people and property.

Primary responsibility for the development of the CPUC Fire-Threat Map was delegated to a group of utility mapping experts known as the Peer Development Panel (PDP), with oversight from a team of independent experts known as the Independent Review Team (IRT). The members of the IRT were selected by CAL FIRE and CAL FIRE served as the Chair of the IRT. The development of CPUC Fire-Threat Map includes input from many stakeholders, including investor-owned and publicly owned electric utilities, communications infrastructure providers, public interest groups, and local public safety agencies.

The PDP served a draft statewide CPUC Fire-Threat Map on July 31, 2017, which was subsequently reviewed by the IRT. On October 2 and October 5, 2017, the PDP filed an Initial CPUC Fire-Threat Map that reflected the results of the IRT's review through September 25, 2017. The [final IRT-approved CPUC Fire-Threat Map](#) was filed on November 17, 2017. On November 21, 2017, SED filed on behalf of the IRT a [summary report detailing the production of the CPUC Fire-Threat Map](#) (referenced at the time as Fire Map 2). Interested parties were provided opportunity to submit alternate maps, written comments on the IRT-approved map and alternate maps (if any), and motions for Evidentiary Hearings. No motions for Evidentiary Hearings or alternate map proposals were received. As such, on January 19, 2018 the CPUC adopted, via Safety and Enforcement Division's [\(SED\) disposition of a Tier 1 Advice Letter](#), the final CPUC Fire-Threat Map.

High Fire-Threat District (HFTD)

In [D.17-01-009](#), as modified by [D.17-06-024](#), the CPUC adopted a work plan for the development and adoption of the CPUC Fire-Threat Map, which constitutes one part of the High Fire-Threat District (HFTD). Pursuant to these decisions, the HFTD is a composite of two maps:

1. Tier 1 High Hazard Zones (HHZs) on the ***U.S. Forest Service-CAL FIRE joint map of Tree Mortality HHZs ("Tree Mortality HHZ Map")***.
2. Tier 2 and Tier 3 fire-threat areas on the ***CPUC Fire-Threat Map***

The Tree Mortality HHZ Map is an off-the-shelf map. Tier 1 HHZs are zones in direct proximity to communities, roads, and utility lines, and are a direct threat to public safety. Tier 2 fire-threat areas depict areas where there is an elevated risk (including likelihood and potential impacts on people and property) from utility associated wildfires. Tier 3 fire-threat areas depict areas where there is an extreme risk (including likelihood and potential impacts on people and property) from utility associated wildfires.

It should be noted that (1) Tier 2 and Tier 3 fire-threat areas on the CPUC Fire-Threat Map may overlap Tier 1 HHZs on the Tree Mortality HHZ Map, (2) the Tree Mortality HHZ Map is not owned or maintained by the CPUC, and (3) the Tree Mortality HHZ Map is updated much more frequently (approximately annually) than the 10-year update cycle adopted by the above-mentioned decisions for the CPUC Fire-Threat Map.

The fire-safety regulations described below apply only to areas designated as "high fire-threat areas" in accordance with the adopted interim maps. Similarly, the HFTD, as described in this section, is intended to depict an analogous area based, in part, upon a mapping product (i.e. CPUC Fire-Threat Map) developed specifically for the purpose of scoping utility regulations.

Fire-Safety Regulations

The fire-safety regulations adopted in R.08-11-005 that relied on the interim maps include:

- **GO 95, Rule 18A**, which requires electric utilities and communication infrastructure providers (CIPs) to place a high priority on the correction of significant fire hazards in high fire-threat areas of Southern California.
- **GO 95, Rules 31.2, 80.1A, and 90.1B**, which set the minimum frequency for inspections of aerial communication facilities located in close proximity to power lines in high fire-threat areas throughout California.
- **GO 95, Rule 35, Table 1, Case 14**, which requires increased radial clearances between bare-line conductors and vegetation in high fire-threat areas of Southern California.
- **GO 95, Appendix E**, which authorizes increased time-of-trim clearances between bare-line conductors and vegetation in high fire-threat areas of Southern California.
- **GO 165, Appendix A, Table 1**, which requires more frequent patrol inspections of overhead powerline facilities in rural, high fire-threat areas of Southern California.
- **GO 166, Standard 1.E.**, which requires each electric utility in Southern California to develop and submit a plan to reduce the risk of fire ignitions by overhead facilities in high fire-threat areas during extreme fire-weather events. Electric utilities in Northern California must also develop and submit a plan if they have overhead facilities in high fire-threat areas that are subject to extreme fire-weather events.

The scope of [R.15-05-006](#) included the identification, evaluation, and adoption of additional fire-safety regulations for the High Fire-threat District (HFTD). To this end, a series of public workshops were held by group known as the Fire Safety Technical Panel (FSTP), chaired by the CPUC's Safety and Enforcement Division (SED) and Southern California Edison Company (SCE). On July 10, 2017, the FSTP filed a Workshop Report that contained 23 proposed fire-safety regulations and eight (8) alternatives. Interested parties filed opening comments on July 31, 2017, and reply comments on August 11, 2017. On December 21, 2017, the CPUC issued [D.17-12-024](#), adopting [new fire-safety regulations](#) in the HFTD.

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